

0059887

SAF-B03-015
Remaining Sites Confirmation
Sampling-Soil
FINAL DATA PACKAGE

E:MAIL RESULTS TO:

Ella Feist

N/A
INITIAL/DATE

Mike Stankovich

N/A
INITIAL/DATE

MAIL COMPLETE COPY OF DATA PACKAGE TO:

Ella Feist

H9-01

BF
INITIAL/DATE

Mike Stankovich

H9-02

BF 6/9/03
INITIAL/DATE

Bob Hynes

H0-18

BF
INITIAL/DATE

Jeanette Duncan

H9-02

BF
INITIAL/DATE

COMMENTS: (PLEASE INCLUDE THE FOLLOWING ON THE COVER SHEET)

SDG

H2231

SAF-B03-015

Rad only ☒ Chem only Rad & Chem

☒ Complete

Partial

Sample Location/Waste Site: 600-128

RECEIVED
JUL 28 2003

EDMC



30 May 2003

Joan Kessner
Bechtel-Hanford, Inc.
3190 Washington Way
MSIN H9-03
Richland, WA 99352

Subject: Contract No. 630
Analytical Data Package

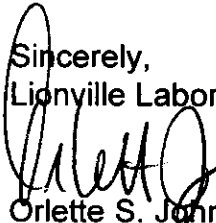
Dear Ms. Kessner:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

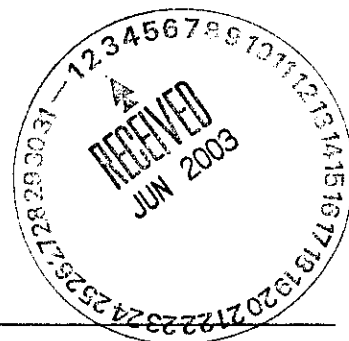
LvLI Batch #	0305L461
SDG #	H2231
SAF #	B03-015
Date Received	5-21-03
# Samples	1
Matrix	Soil
Volatiles	
Semivolatiles	X
Pest/PCB	X
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,
Lionville Laboratory Incorporated


Orlette S. Johnson
Project Manager

r:\group\pm\orlette\tnu-hanford\data\b_ltrs.doc



Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2231



DATE RECEIVED: 05/21/03

LVL LOT # :0305L461

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00P54	001	S	03LE0617	05/19/03	05/23/03	05/27/03
J00P54	001 MS	S	03LE0617	05/19/03	05/23/03	05/27/03
J00P54	001 MSD	S	03LE0617	05/19/03	05/23/03	05/27/03

LAB QC:

SBLKTZ	MB1	S	03LE0617	N/A	05/23/03	05/27/03
SBLKTZ	MB1 BS	S	03LE0617	N/A	05/23/03	05/27/03
SBLKTZ	MB1 BSD	S	03LE0617	N/A	05/23/03	05/27/03



Client: TNU-HANFORD B03-015
LVL #: 0305L461
SDG/SAF # H2231/B03-015

W.O. #: 11343-606-001-9999-00
Date Received: 05-21-2003

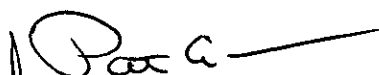
SEMIVOLATILE

One (1) soil sample was collected on 05-19-2003.

The sample and its associated QC samples were extracted according to Lionville Laboratory OPs based on method 3550 on 05-23-2003 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 05-27-2003.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
2. The sample was extracted and analyzed within required holding time.
3. Non-target compounds were detected in the sample.
4. All surrogate recoveries were within EPA QC limits.
5. All matrix spike recoveries were within EPA QC limits.
6. All blank spike recoveries were within EPA QC limits.
7. Internal standard area criteria were not met for sample J00P54 and the blank spike sample (03LE0617-MB1 BS). The GC/MS instrument was inspected for possible malfunction and was judged to be functioning properly and all surrogate recoveries were within QC limits; consequently, the sample was not reanalyzed.
8. Manual integrations are performed according to OP 21-06A-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.


J. Michael Taylor
President
Lionville Laboratory Incorporated

05-30-03
Date

son\group\data\bna\tnu-hanford-0305-461.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 11 pages.

GLOSSARY

DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I = Interference.
- NQ = Result qualitatively confirmed but not able to quantify.
- A = Indicates that a TIC is a suspected aldol-condensation product.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.

GLOSSARY

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

mmz\10-94\gloss.bna



TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP - Missed Peak: manually added peak not found by automatic quan program.
- PA - Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 05/30/03 12:03

RFW Batch Number: 0305L461

Client: TNUHANFORD B03-015 H2231

Work Order: 11343606001

Page: 1a

Cust ID:		J00P54	J00P54	J00P54	SBLKTZ	SBLKTZ BS	SBLKTZ BSD
Sample RFW#:		001	001 MS	001 MSD	03LE0617-MB1	03LE0617-MB1	03LE0617-MB1
Information Matrix:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
D.F.:		1.00	1.00	1.00	1.00	1.00	1.00
Units:		ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	81 %	77 %	82 %	65 %	74 %	81 %
	2-Fluorobiphenyl	90 %	87 %	89 %	71 %	82 %	83 %
	Terphenyl-d14	126 %	120 %	116 %	94 %	109 %	109 %
	Phenol-d5	85 %	70 %	77 %	65 %	72 %	75 %
	2-Fluorophenol	82 %	68 %	77 %	64 %	73 %	75 %
	2,4,6-Tribromophenol	84 %	88 %	90 %	59 %	80 %	80 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
Phenol		330 U	62 %	69 %	330 U	64 %	68 %
bis (2-Chloroethyl) ether		330 U	330 U	330 U	330 U	330 U	330 U
2-Chlorophenol		330 U	65 %	74 %	330 U	70 %	72 %
1,3-Dichlorobenzene		330 U	330 U	330 U	330 U	330 U	330 U
1,4-Dichlorobenzene		330 U	63 %	73 %	330 U	69 %	76 %
1,2-Dichlorobenzene		330 U	330 U	330 U	330 U	330 U	330 U
2-Methylphenol		330 U	330 U	330 U	330 U	330 U	330 U
2,2'-oxybis (1-Chloropropane)		330 U	330 U	330 U	330 U	330 U	330 U
3- and/or 4-Methylphenol		330 U	330 U	330 U	330 U	330 U	330 U
N-Nitroso-di-n-propylamine		330 U	75 %	84 %	330 U	82 %	85 %
Hexachloroethane		330 U	330 U	330 U	330 U	330 U	330 U
Nitrobenzene		330 U	330 U	330 U	330 U	330 U	330 U
Isophorone		330 U	330 U	330 U	330 U	330 U	330 U
2-Nitrophenol		330 U	330 U	330 U	330 U	330 U	330 U
2,4-Dimethylphenol		330 U	330 U	330 U	330 U	330 U	330 U
bis (2-Chloroethoxy) methane		330 U	330 U	330 U	330 U	330 U	330 U
2,4-Dichlorophenol		330 U	330 U	330 U	330 U	330 U	330 U
1,2,4-Trichlorobenzene		330 U	69 %	76 %	330 U	70 %	77 %
Naphthalene		330 U	330 U	330 U	330 U	330 U	330 U
4-Chloroaniline		330 U	330 U	330 U	330 U	330 U	330 U
Hexachlorobutadiene		330 U	330 U	330 U	330 U	330 U	330 U
4-Chloro-3-methylphenol		330 U	71 %	73 %	330 U	68 %	67 %
2-Methylnaphthalene		330 U	330 U	330 U	330 U	330 U	330 U
Hexachlorocyclopentadiene		330 U	330 U	330 U	330 U	330 U	330 U
2,4,6-Trichlorophenol		330 U	330 U	330 U	330 U	330 U	330 U
2,4,5-Trichlorophenol		830 U	830 U	830 U	830 U	830 U	830 U

* = Outside of EPA CLP QC limits.

Cust ID:

J00P54

J00P54

J00P54

SBLKTZ

SBLKTZ BS

SBLKTZ BSD

RFW#:

001

001 MS

001 MSD

03LE0617-MB1

03LE0617-MB1

03LE0617-MB1

2-Chloronaphthalene	330	U	330	U	330	U	330	U	330	U	330	U
2-Nitroaniline	830	U	830	U	830	U	830	U	830	U	830	U
Dimethylphthalate	330	U	330	U	330	U	330	U	330	U	330	U
Acenaphthylene	330	U	330	U	330	U	330	U	330	U	330	U
2,6-Dinitrotoluene	330	U	330	U	330	U	330	U	330	U	330	U
3-Nitroaniline	830	U	830	U	830	U	830	U	830	U	830	U
Acenaphthene	330	U	76	%	79	%	330	U	72	%	72	%
2,4-Dinitrophenol	830	U	830	U	830	U	830	U	830	U	830	U
4-Nitrophenol	830	U	73	%	78	%	830	U	61	%	56	%
Dibenzofuran	330	U	330	U	330	U	330	U	330	U	330	U
2,4-Dinitrotoluene	330	U	76	%	81	%	330	U	74	%	69	%
Diethylphthalate	330	U	330	U	330	U	330	U	330	U	330	U
4-Chlorophenyl-phenylether	330	U	330	U	330	U	330	U	330	U	330	U
Fluorene	330	U	330	U	330	U	330	U	330	U	330	U
4-Nitroaniline	830	U	830	U	830	U	830	U	830	U	830	U
4,6-Dinitro-2-methylphenol	830	U	830	U	830	U	830	U	830	U	830	U
N-Nitrosodiphenylamine (1)	330	U	330	U	330	U	330	U	330	U	330	U
4-Bromophenyl-phenylether	330	U	330	U	330	U	330	U	330	U	330	U
Hexachlorobenzene	330	U	330	U	330	U	330	U	330	U	330	U
Pentachlorophenol	830	U	75	%	85	%	830	U	62	%	66	%
Phenanthrene	330	U	330	U	330	U	330	U	330	U	330	U
Anthracene	330	U	330	U	330	U	330	U	330	U	330	U
Carbazole	330	U	330	U	330	U	330	U	330	U	330	U
Di-n-butylphthalate	100	J	110	J	270	J	330	U	330	U	330	U
Fluoranthene	330	U	330	U	330	U	330	U	330	U	330	U
Pyrene	330	U	111	%	112	%	330	U	100	%	101	%
Butylbenzylphthalate	330	U	330	U	330	U	330	U	330	U	330	U
3,3'-Dichlorobenzidine	330	U	330	U	330	U	330	U	330	U	330	U
Benzo(a)anthracene	330	U	330	U	330	U	330	U	330	U	330	U
Chrysene	330	U	330	U	330	U	330	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	330	U	19	J	20	J	330	U	330	U	330	U
Di-n-octyl phthalate	330	U	330	U	330	U	330	U	330	U	330	U
Benzo(b)fluoranthene	330	U	330	U	330	U	330	U	330	U	330	U
Benzo(k)fluoranthene	330	U	330	U	330	U	330	U	330	U	330	U
Benzo(a)pyrene	330	U	330	U	330	U	330	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	330	U	330	U	330	U	330	U	330	U	330	U
Dibenz(a,h)anthracene	330	U	330	U	330	U	330	U	330	U	330	U
Benzo(g,h,i)perylene	330	U	330	U	330	U	330	U	330	U	330	U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00P54

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B03-015 H2231

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L461-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: A052710

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: 0 decanted: (Y/N)

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 05/27/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 3

(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	2.741	300	JAB
2.	ALDOL CONDENSATE	3.209	20000	JAB
3.	ALDOL CONDENSATE	4.376	100	JAB

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKTZ

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B03-015 H2231

Matrix: (soil/water) SOIL

Lab Sample ID: 03LE0617-MB1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: A052707

Level: (low/med) LOW

Date Received: 05/23/03

% Moisture: _____ decanted: (Y/N) _____

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 05/27/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 6

(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	2.735	200	JA
2.	ALDOL CONDENSATE	3.210	20000	JA
3.	ALDOL CONDENSATE	4.370	100	JA
4.	UNKNOWN	19.459	70	J
5.	UNKNOWN	20.321	80	J
6.	UNKNOWN	22.167	70	J

9

03054461

Custody Transfer Record/Lab Work Request Page 1 of 1**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**

Client <u>TNLL Hanford</u> <u>B03-015</u>				Refrigerator #		A <u>2</u> B <u>2</u>		C <u>2</u>	
Est. Final Proj. Sampling Date				#/Type Container		Liquid			
Project # <u>11343-606-001-9999-00</u>				Solid		<u>1A6L</u> <u>1A6L</u>		<u>1A6L</u>	
Project Contact/Phone #				Volume		Liquid			
Lionville Laboratory Project Manager <u>OJ</u>				Solid		<u>125</u> <u>250</u>		<u>60</u>	
QC <u>SPEC</u> Del <u>STD</u> TAT <u>7 day</u>				Preservatives					
Date Rec'd <u>5/21/03</u> Date Due <u>5-28-03</u>				ANALYSES REQUESTED →		ORGANIC		INORG	
						VOA BNA <u>pest</u> PCB Herb		Metal <u>C</u>	
								Lionville Laboratory Use Only	
MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum DL - Drum L - EP/TCLP WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	Time Collected	H	P	M
			MS MSD				0625H	0700	0600
	<u>001</u>	<u>J00P54</u>	<u>✓</u> <u>✓</u>	<u>S</u>	<u>5/19/03</u>	<u>1125</u>	<u>1</u>	<u>1</u>	<u>1</u>

Special Instructions:				DATE/REVISIONS:				Lionville Laboratory Use Only			
				1. _____				Samples were: 1) Shipped <u>✓</u> or Hand Delivered _____			
				2. _____				Airbill # _____			
				3. _____				2) Ambient or Chilled _____			
				4. _____				3) Received in Good Condition <u>Y</u> or N _____			
				5. _____				4) Samples Properly Preserved <u>Y</u> or N _____			
				6. _____				5) Received Within Holding Times <u>Y</u> or N _____			

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time	Discrepancies Between Samples Labels and COC Record? Y or N
<u>FedEx</u>	<u>J Perry</u>	<u>5/21/03</u>	<u>0900</u>	<u>COMPOSITE WASTE</u>	<u>ORIGINAL REWRITTEN</u>			<u>NO COC present</u>

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: *TNU Hanford*

Order/Project:

DATE: *5/21/03*

FW / SOW# / Release #: *B03-015*

Laboratory SDG #: *0305 Ltl61*

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
2. Outside of coolers or shipping containers are free from damage?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
3. Airbill # recorded?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> see Comment # <i>(1)</i>
5. Sample containers are intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
6. Custody seals on sample containers intact, signed and dated?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
7. All samples on coc received?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
8. All sample label information matches coc?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	<input checked="" type="checkbox"/> see Comment # <i>(1)</i>
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
10. Shipment meets Lvl.1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> see Comment # <i>(1)</i>
11. Where applicable, bar code labels are affixed to coc?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
12. coc signed and dated?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
13. coc will be faxed or emailed to client?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> see Comment #

Cooler # / temp (°C) and Comments:

(1) No coc received for this sample

Laboratory Sample Custodian: *J Perry 05/21/03*

Laboratory Project Manager:

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B03-015 **H2231**



DATE RECEIVED: 05/21/03

LVL LOT # :0305L461

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00P54	001	S	03LE0612	05/19/03	05/25/03	05/27/03
J00P54	001 MS	S	03LE0612	05/19/03	05/25/03	05/27/03
J00P54	001 MSD	S	03LE0612	05/19/03	05/25/03	05/28/03

LAB QC:

PBLKUP	MB1	S	03LE0612	N/A	05/25/03	05/27/03
PBLKUP	MB1 BS	S	03LE0612	N/A	05/25/03	05/27/03

Handwritten signature/initials
5/31/03



Analytical Report

Client: TNU-HANFORD B03-015
LVL #: 0305L461
SDG/SAF #: H2231/B03-015

W.O. #: 11343-606-001-9999-00
Date Received: 05-21-03

PCB

One (1) soil sample was collected on 05-19-03.


The sample and its associated QC samples were extracted on 05-25-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-27,28-03. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8082.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. Please refer to the Sample Receipt Checklist for sample discrepancies in LvLI's sample acceptance policy.
2. All required holding times for extraction and analysis have been met.
3. The sample and its associated QC samples received Florisil, Sulfuric Acid, and Sulfur cleanups.
4. The method blank was below the reporting limits for all target compounds.
5. All obtainable surrogate recoveries were within acceptance criteria.
6. All blank spike recoveries were within acceptance criteria.
7. Matrix spike recoveries were unobtainable due to the dilution required for analysis.
8. The sample required a 50-fold instrument dilution due to the high concentrations of non-target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.
9. All initial calibrations associated with this data set were within acceptance criteria.
10. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 8 pages.

11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.


Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/22/03
Date

pefr:\group\data\pest\tnu hanford\05L-461.pcb



GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



GLOSSARY OF PESTICIDE/PCB DATA

- P** = This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC/MS.

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 05/28/03 10:44

RFW Batch Number: 0305L461

Client: TNU-HANFORD B03-015

Work Order: 11343606001 Page: 1

	Cust ID:	J00P54	J00P54	J00P54	PBLKUP	PBLKUP BS
Sample Information	RFW#:	001	001 MS	001 MSD	03LE0612-MB1	03LE0612-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	50.0	50.0	50.0	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Decachlorobiphenyl	D %	D %	D %	105 %	115 %
	Tetrachloro-m-xylene	D %	D %	D %	85 %	100 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====						
Aroclor-1016		750 U	D %	D %	15 U	86 %
Aroclor-1221		750 U	750 U	750 U	15 U	15 U
Aroclor-1232		750 U	750 U	750 U	15 U	15 U
Aroclor-1242		750 U	750 U	750 U	15 U	15 U
Aroclor-1248		750 U	750 U	750 U	15 U	15 U
Aroclor-1254		750 U	750 U	750 U	15 U	15 U
Aroclor-1260		750 U	D %	D %	15 U	88 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

4/25/03

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS[illegible]

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: *TNU Hanford*

Purchase Order/Project:

DATE: *5/21/03*

SAF# / SOW# / Release #: *B03-015*

Laboratory SDG #: *0305 LHK61*

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|--|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> see Comment # <i>(1)</i> |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input checked="" type="checkbox"/> see Comment # <i>(1)</i> |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVLJ Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> see Comment # <i>(1)</i> |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

(1) No coc received for this sample

#

Laboratory Sample Custodian: *J Perry 05/21/03*

Laboratory Project Manager:

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2231



DATE RECEIVED: 05/21/03

LVL LOT # :0305L461

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
---------------------	-------	-----	--------	------------	-----------	----------

J00P54

SILVER, TOTAL	001	S	03L0295	05/19/03	05/27/03	05/28/03
SILVER, TOTAL	001 REP	S	03L0295	05/19/03	05/27/03	05/28/03
SILVER, TOTAL	001 MS	S	03L0295	05/19/03	05/27/03	05/28/03
ARSENIC, TOTAL	001	S	03L0295	05/19/03	05/27/03	05/28/03
ARSENIC, TOTAL	001 REP	S	03L0295	05/19/03	05/27/03	05/28/03
ARSENIC, TOTAL	001 MS	S	03L0295	05/19/03	05/27/03	05/28/03
BARIUM, TOTAL	001	S	03L0295	05/19/03	05/27/03	05/28/03
BARIUM, TOTAL	001 REP	S	03L0295	05/19/03	05/27/03	05/28/03
BARIUM, TOTAL	001 MS	S	03L0295	05/19/03	05/27/03	05/28/03
CADMIUM, TOTAL	001	S	03L0295	05/19/03	05/27/03	05/28/03
CADMIUM, TOTAL	001 REP	S	03L0295	05/19/03	05/27/03	05/28/03
CADMIUM, TOTAL	001 MS	S	03L0295	05/19/03	05/27/03	05/28/03
CHROMIUM, TOTAL	001	S	03L0295	05/19/03	05/27/03	05/28/03
CHROMIUM, TOTAL	001 REP	S	03L0295	05/19/03	05/27/03	05/28/03
CHROMIUM, TOTAL	001 MS	S	03L0295	05/19/03	05/27/03	05/28/03
MERCURY, TOTAL	001	S	03C0125	05/19/03	05/27/03	05/27/03
MERCURY, TOTAL	001 REP	S	03C0125	05/19/03	05/27/03	05/27/03
MERCURY, TOTAL	001 MS	S	03C0125	05/19/03	05/27/03	05/27/03
LEAD, TOTAL	001	S	03L0295	05/19/03	05/27/03	05/28/03
LEAD, TOTAL	001 REP	S	03L0295	05/19/03	05/27/03	05/28/03
LEAD, TOTAL	001 MS	S	03L0295	05/19/03	05/27/03	05/28/03
SELENIUM, TOTAL	001	S	03L0295	05/19/03	05/27/03	05/28/03
SELENIUM, TOTAL	001 REP	S	03L0295	05/19/03	05/27/03	05/28/03
SELENIUM, TOTAL	001 MS	S	03L0295	05/19/03	05/27/03	05/28/03

LAB QC:

SILVER LABORATORY	LC1 BS	S	03L0295	N/A	05/27/03	05/28/03
SILVER, TOTAL	MB1	S	03L0295	N/A	05/27/03	05/28/03
ARSENIC LABORATORY	LC1 BS	S	03L0295	N/A	05/27/03	05/28/03
ARSENIC, TOTAL	MB1	S	03L0295	N/A	05/27/03	05/28/03
BARIUM LABORATORY	LC1 BS	S	03L0295	N/A	05/27/03	05/28/03
BARIUM, TOTAL	MB1	S	03L0295	N/A	05/27/03	05/28/03
CADMIUM LABORATORY	LC1 BS	S	03L0295	N/A	05/27/03	05/28/03
CADMIUM, TOTAL	MB1	S	03L0295	N/A	05/27/03	05/28/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2231

DATE RECEIVED: 05/21/03

LVL LOT # :0305L461

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM LABORATORY	LC1 BS	S	03L0295	N/A	05/27/03	05/28/03
CHROMIUM, TOTAL	MB1	S	03L0295	N/A	05/27/03	05/28/03
MERCURY LABORATORY	LC1 BS	S	03C0125	N/A	05/27/03	05/27/03
MERCURY, TOTAL	MB1	S	03C0125	N/A	05/27/03	05/27/03
LEAD LABORATORY	LC1 BS	S	03L0295	N/A	05/27/03	05/28/03
LEAD, TOTAL	MB1	S	03L0295	N/A	05/27/03	05/28/03
SELENIUM LABORATORY	LC1 BS	S	03L0295	N/A	05/27/03	05/28/03
SELENIUM, TOTAL	MB1	S	03L0295	N/A	05/27/03	05/28/03



Analytical Report

Client: TNU-HANFORD B03-015
LVL#: 0305L461
SDG/SAF#: H2231/B03-015

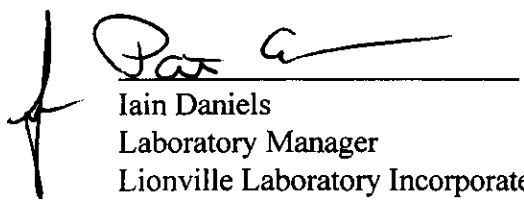
W.O.#: 11343-606-001-9999-00
Date Received: 05-21-03

METALS CASE NARRATIVE

1. This narrative covers the analysis of 1 soil sample.
2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. Please refer to the Sample Receipt Check List for sample discrepancies in LvLI's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits.
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
8. All ICP Interference Check Standards were within control limits.
9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. All matrix spike (MS) recoveries were within the 75-125% control limits. Refer to the Inorganics Accuracy Report.
11. The duplicate analyses for 4 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 13 pages.

12. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
13. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.


Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated
gmb/m05-461

05-30-03
Date

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this

Lot#: 03052461

Leaching Procedure: 1310 1311 1312 Other:

CLP Metals Digestion and Analysis Methods: ILM03.0 ILM04.0

Metals Digestion Methods: 3005A 3010A 3015 3020A ☒ 3050B 3051 200.7 SS17
Other:

Metals Analysis Methods

	SW846	EPA	STD MTD	EPA OSWR	USATHAMA
Aluminum	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Antimony	<u>6010B</u> <u>7041</u> ^s	<u>200.7</u> <u>204.2</u>			<u>99</u>
Arsenic	<u>6010B</u> <u>7060A</u> ^s	<u>200.7</u> <u>206.2</u>	<u>3113B</u>		<u>99</u>
Barium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Beryllium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Bismuth	<u>6010B</u> ¹	<u>200.7</u> ¹		<u>1620</u>	<u>99</u>
Boron	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Cadmium	<u>6010B</u> <u>7131A</u> ^s	<u>200.7</u> <u>213.2</u>			<u>99</u>
Calcium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Chromium	<u>6010B</u> <u>7191</u> ^s	<u>200.7</u> <u>218.2</u>			<u>SS17</u>
Cobalt	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Copper	<u>6010B</u> <u>7211</u> ^s	<u>200.7</u> <u>220.2</u>			<u>99</u>
Iron	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Lead	<u>6010B</u> <u>7421</u> ^s	<u>200.7</u> <u>239.2</u>	<u>3113B</u>		<u>99</u>
Lithium	<u>6010B</u> <u>7430</u> ⁴	<u>200.7</u>		<u>1620</u>	<u>99</u>
Magnesium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Manganese	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Mercury	<u>7470A</u> ^s <u>7471A</u> ^s	<u>245.1</u> ² <u>245.5</u> ²			<u>99</u>
Molybdenum	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Nickel	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Potassium	<u>6010B</u> <u>7610</u> ⁴	<u>200.7</u> <u>258.1</u> ⁴			<u>99</u>
Rare Earths	<u>6010B</u> ¹	<u>200.7</u> ¹		<u>1620</u>	<u>99</u>
Selenium	<u>6010B</u> <u>7740</u> ^s	<u>200.7</u> <u>270.2</u>	<u>3113B</u>		<u>99</u>
Silicon	<u>6010B</u> ¹	<u>200.7</u>		<u>1620</u>	<u>99</u>
Silica	<u>6010B</u>	<u>200.7</u>		<u>1620</u>	<u>99</u>
Silver	<u>6010B</u> <u>7761</u> ^s	<u>200.7</u> <u>272.2</u>			<u>99</u>
Sodium	<u>6010B</u> <u>7770</u> ⁴	<u>200.7</u> <u>273.1</u> ⁴			<u>99</u>
Strontium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Thallium	<u>6010B</u> <u>7841</u> ^s	<u>200.7</u> <u>279.2</u> <u>200.9</u>			<u>99</u>
Tin	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Titanium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Uranium	<u>6010B</u> ¹	<u>200.7</u> ¹		<u>1620</u>	<u>99</u>
Vanadium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Zinc	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Zirconium	<u>6010B</u> ¹	<u>200.7</u> ¹		<u>1620</u>	<u>99</u>

Other:

Method:

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LCS = Laboratory Control Sample.

NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.
2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).
3. Flame AA.
4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/29/03

CLIENT: TNUHANFORD B03-015 H2231
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L461

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
*****	*****	*****	*****	*****	*****	*****
-001	J00P54	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	0.33 u	MG/KG	0.33	1.0
		Barium, Total	1.1	MG/KG	0.02	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.15	MG/KG	0.1	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Lead, Total	0.55	MG/KG	0.23	1.0
		Selenium, Total	0.42 u	MG/KG	0.42	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/29/03

CLIENT: TNUHANFORD B03-015 H2231
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L461

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
BLANK1	03L0295-MB1	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	0.33 u	MG/KG	0.33	1.0
		Barium, Total	0.03	MG/KG	0.02	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.12	MG/KG	0.10	1.0
		Lead, Total	0.42	MG/KG	0.23	1.0
		Selenium, Total	0.42 u	MG/KG	0.42	1.0
BLANK1	03C0125-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

8

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/29/03

CLIENT: TNUHANFORD B03-015 H2231

LVL LOT #: 0305L461

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
*****	*****	*****	*****	*****	*****	*****	*****
-001	J00P54	Silver, Total	4.3	0.12u	4.5	95.6	1.0
		Arsenic, Total	168	0.33u	182	92.2	1.0
		Barium, Total	174	1.1	182	95.0	1.0
		Cadmium, Total	4.2	0.04u	4.5	93.3	1.0
		Chromium, Total	17.3	0.15	18.2	94.2	1.0
		Mercury, Total	0.13	0.01u	0.14	92.1	1.0
		Lead, Total	43.2	0.55	45.4	93.9	1.0
		Selenium, Total	163	0.42u	182	89.6	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/29/03

CLIENT: TNUHANFORD B03-015 H2231
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L461

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
-001REP	J00P54	Silver, Total	0.12u	0.11u	NC	1.0
		Arsenic, Total	0.33u	0.51	NC 20v	1.0
		Barium, Total	1.1	2.3	70.6	1.0
		Cadmium, Total	0.04u	0.04u	NC	1.0
		Chromium, Total	0.15	0.51	109.4	1.0
		Mercury, Total	0.01u	0.01u	NC	1.0
		Lead, Total	0.55	1.9	110.5	1.0
		Selenium, Total	0.42u	0.37u	NC	1.0

up 5/30/03

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/29/03

CLIENT: TNUHANFORD B03-015 H2231
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L461

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
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LCS1	03L0295-LC1	Silver, LCS	48.9	50.0	MG/KG	97.8
		Arsenic, LCS	917	1000	MG/KG	91.7
		Barium, LCS	491	500	MG/KG	98.3
		Cadmium, LCS	23.8	25.0	MG/KG	95.2
		Chromium, LCS	49.2	50.0	MG/KG	98.4
		Lead, LCS	239	250	MG/KG	95.5
		Selenium, LCS	864	1000	MG/KG	86.4
LCS1	03C0125-LC1	Mercury, LCS	6.5	6.2	MG/KG	105.2

0305 L461

A B C

[illegible]

Date Rec'd <u>5/21/03</u> Date Due <u>5-28-03</u>		ANALYSES REQUESTED →	ORGANIC					INORG	
VOA	BNA		pest	PCB	Herb	Metal	CN		

[illegible]

DATE/REVISIONS:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Lionville Laboratory Use Only

Samples were: ✓

1) Shipped ✓ or
Hand Delivered _____
Airbill # _____

2) Ambient or Chilled _____

3) Received in Good
Condition (Y) or N

4) Samples
Properly Preserved (Y) or N

5) Received Within
Holding Times (Y) or N

Tamper Resistant Seal was:

1) Present on Outer
Package (Y) or N

2) Unbroken on Outer
Package (Y) or N

3) Present on Sample
(Y) or N

4) Unbroken on
Sample (Y) or N

COC Record Present
Upon Sample Rec'd (Y) or (N)

Cooler _____
Temp _____ °C

Relinquished by	Received by	Date	Time
Ed Ey	1 Dorn	5/21/13	0900

Relinquished by COMPOSITE	Received by ORIGINAL	Date	Time
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Discrepancies Between
Samples Labels and
COC Record? Y or N
NOTES: *NA COC*

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

ENT: *TNU Hanford*

ase Order/Project:

DATE: *5/21/03*

/ SOW# / Release #: *B03-015*

ratory SDG #: *0305 LUL*

E: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|--|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> see Comment # <i>(1)</i> |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input checked="" type="checkbox"/> see Comment # <i>(1)</i> |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> see Comment # <i>(1)</i> |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

oler # / temp (°C) and Comments:

(1) No coc received for this sample

laboratory Sample Custodian: *J Perry 05/21/03*

laboratory Project Manager: